

U.S.S.N. 10/696,825

REMARKS

Claims 17-20 are pending in this application.

Claims 17-20 are rejected.

The office action dated April 11, 2005 indicates that claims 17 and 19-20 are rejected under 35 USC §103(a) as being unpatentable over Beckham et al. U.S. Patent No. 4,604,644 in view of Norland Optical Adhesive and HD Microsystems. This rejection is respectfully traversed.

Claim 17 has been amended for clarity. Amended claim 17 recites an article comprising a semiconductor substrate; and a coating mixture on the semiconductor substrate. The coating mixture comprises adhesion promoter and photopolymer. The adhesion promoter contains α -amino propyltriethoxysilane in organic solution.

The adhesion promoter recited in claim 17 enhances the wettability of the semiconductor substrate. This, in turn, enables the photopolymer to spread evenly and uniformly across the substrate.

Figures 5-6 of Beckham show a device 10 bonded to a substrate 5 by solder bonding terminals 13. A dielectric 30 fills the gaps between the terminals at the periphery of the device 10 (col. 6, lines 43-47). The dielectric can be made of a suitable organic polymerized resin & that has the ability to coat effectively and bond to the solder terminals, the semiconductor device and the substrate (col. 6, lines 49-57). A resin - Al-10 - is described at col. 6, line 57 to col. 7, line 10. The resin can be mixed with an adhesion promoter (col. 7, lines 10-16).

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The AI-10 is not a photopolymer. It is heated to cause a polymerizing reaction (col. 7, lines 9-10). Moreover, Beckham et al. do not disclose an adhesion promoter that contains α -amino propyltriethoxysilane in organic solution.

None of the other documents teach or suggest a mixture of a photopolymer and an adhesion promoter such as VM-652. According to Norland Optical's data sheet, the photopolymer NOA83H is a single component adhesive that is used to bond optical components.

According to HD Microsystems data sheet, the adhesion promoter VM-652 is used to improve adhesion of polyimide coatings to silicon dioxide and silicon nitride-coated substrates. Good adhesion is obtained by drying or pre-baking the VM-652. This suggests that VM-652 is a single component promoter that is applied in a two-step process. The data sheet does not teach or suggest mixing VM-652 with anything else.

Moreover, none of the cited documents teach or suggest that a mixture of a photopolymer and an adhesion promoter such as VNM-652 is a suitable alternative to Beckham et al.'s mixture of AI-10 and an adhesion promoter.

For these reasons, the '103 rejection of claim 17 should be withdrawn. Accordingly, claim 17 and its dependent claims 18-20 should be allowed over the documents made of record.

Claims 18-20 have been amended to depend properly from amended claim 17.

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The specification has been amended to make the Summary and Abstract commensurate in scope with amended claim 17.

The examiner is respectfully requested to withdraw the rejections of the claims. The examiner is encouraged to contact applicants' attorney Hugh Gortler to discuss any issues that might remain.